

PATENT
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Docket No. DIV-1510-1US (112768-235)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Jay M. Short Examiner: Park, Hankyel T.
U.S. Serial No.: 09/677,584 Art Unit: 1648
Filing Date: September 30, 2000
For: **WHOLE CELL ENGINEERING BY MUTAGENIZING A
SUBSTANTIAL PORTION OF A STARTING GENOME,
COMBINING MUTATIONS AND OPTIONALLY REPEATING**

Date of Notice of Allowance: December 17, 2002 Issue Fee Due: March 17, 2003
Confirmation No. 3873

BY HAND DELIVERY

Assistant Commissioner for Patents
Washington, D.C. 20231

AMENDMENT AFTER NOTICE OF ALLOWANCE
PURSUANT TO 37 C.F.R. § 1.312

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3/23/06
Sir:

A Notice of Allowance was mailed on December 17, 2002 and the issue fee is due March 17, 2003. Therefore, this Amendment is being timely filed. This letter requests amendment to the specification such that the descriptions of the drawings conform to the corrected formal drawings.

Please amend the above referenced application as follows. These amendments add text to the Brief Description of the Drawings which was deleted from the original drawings themselves.

IN THE SPECIFICATION:

On page 41, please replace the description for Figures 15-18, 20-22 and 24 with the following paragraphs:

Figure 15. Holistic engineering of differentially activatable stacked traits in novel transgenic plants using directed evolution and whole cell monitoring which can include all detectable functions and physical parameters). Examples include morphology, behavior,

growth, responsiveness to stimuli (e.g., antibiotics, different environment, etc.). May also include all measurable molecules, including nucleic acids, proteins, carbohydrates, proteoglycans, glycoproteins, and lipids. Stacked traits can include selectively and differentially activatable traits.

Figure 16. Differential Activation of Selected Traits can Be Achieved by Adjusting and Controlling the Environment of the Traits. For example, in one aspect, stacked traits can be comprised genetically introduced enzymes. Because the stacked enzymes have different activity profile (including reaction specificities and reaction requirements) they can be selectively and differentially activated by adjusting the environment to which they are exposed.

Figure 17. Harvesting, Processing, Storage. Differentially activated and/or selected Enzymes respond to the environment of harvesting, processing and storage to activate environmentally action specific promoters.

Figure 18. Processing. Pre-Pro Gene Product, an example of a Gene Product might be a protein. Through processing/ decorating the protein changes forms, eventually becoming active. It is at this point that specific traits can be expressed differentially.

Figure 20. Differential Activation of Selected Precursor (Inactive) Gene Products. Differential activation of selected precursor (inactive) gene products by controlling the post-translational modifications that differentially transform selected molecules from inactive precursor form to active form. Deselection of particular molecules can also be achieved by degradation (ex. by proteoclytic cleavage).

Figure 21. Starting population comprised of an organism strain to be subjected to improvement or evolution in order to produce a resultant population comprised of an improved organism strain that has a desired trait. Starting polulation comprised of an

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